

# HUMANOID ROBOT VENDOR COMPARISON

## For Modular Housing Manufacturing Use Cases

Date: 2026-03-28 (UTC)

### Purpose

• Compare leading humanoid robotics vendors for near-term pilot suitability in modular/home manufacturing environments.

### Important Note

- Most vendors operate via enterprise pilot programs and custom pricing.
- Public list pricing is generally unavailable; budgeting should be treated as ROM until formal quotes are received.

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## 1) EXECUTIVE SNAPSHOT

### Top Near-Term Pilot Candidates

1. Figure AI (Figure 02)
2. Agility Robotics (Digit)
3. Apptronik (Apollo)

### Strategic Watchlist

4. 1X Technologies
5. Sanctuary AI
6. Tesla Optimus (future availability)

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## 2) VENDOR-BY-VENDOR COMPARISON

### A) Figure AI (Figure 02)

Website: <https://figure.ai>

#### Positioning

- Industrial humanoid platform with strong momentum in enterprise automation narratives.

#### Best-fit Plant Tasks

- Material movement support
- Repetitive station handoffs
- Basic tool/part transport and staging

#### Pros

- Strong market visibility
- Appears focused on factory environments

#### Risks

- Deployment availability and integration terms are enterprise-gated

Pilot Readiness (Practical): Medium-High

### B) Agility Robotics (Digit)

Website: <https://agilityrobotics.com>

#### Positioning

- Proven logistics/warehouse-oriented humanoid workflows.

#### Best-fit Plant Tasks

- Intralogistics movement
- Tote/bin transfer
- Repetitive back-of-line handling

#### Pros

- Strong in practical material handling scenarios
- Real-world operational focus

#### Risks

- May require adaptation for complex fabrication-cell interactions

Pilot Readiness (Practical): High for logistics lanes

### C) Apptronik (Apollo)

Website: <https://apptronik.com>

#### Positioning

- General-purpose humanoid with industrial ambitions.

### **Best-fit Plant Tasks**

- Multi-station assist
- Material staging and repetitive ergonomic tasks

### **Pros**

- Designed for broad task classes
- Good strategic fit for hybrid human-robot plants

### **Risks**

- Early deployment scale and integration maturity should be validated in pilot

Pilot Readiness (Practical): Medium-High

### **D) 1X Technologies**

**Website:** <https://www.1x.tech>

### **Positioning**

- Humanoid development with enterprise/home aspirations.

### **Best-fit Plant Tasks**

- Early pilot assist roles, controlled workflows

### **Pros**

- Innovative platform direction

### **Risks**

- Commercial maturity and industrial deployment scale may vary by region/program

Pilot Readiness (Practical): Medium

### **E) Sanctuary AI**

**Website:** <https://www.sanctuary.ai>

### **Positioning**

- General labor automation via humanoid systems.

### **Best-fit Plant Tasks**

- Structured repetitive workflows in controlled cells

### **Pros**

- Strong autonomy narrative

### **Risks**

- Program structure/pricing/deployment constraints need direct validation

Pilot Readiness (Practical): Medium

### **F) Tesla Optimus**

**Website:** <https://www.tesla.com/AI>

### **Positioning**

- High-visibility humanoid roadmap with long-term industrial potential.

### **Best-fit Plant Tasks**

- Future potential across repetitive factory and logistics roles

### **Pros**

- Potential scale advantage if broadly commercialized

### **Risks**

- Not broadly available for standard enterprise procurement today

Pilot Readiness (Practical): Low (near-term external availability)

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## **3) MANUFACTURING TASK FIT MATRIX (MODULAR HOUSING)**

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### **Best early humanoid use cases**

1. Material staging and line-side replenishment
2. Intra-plant transport between stations
3. Repetitive ergonomic tasks with clear work instructions
4. Kitting and pre-assembly movement
5. Inspection routing support (human QA still signs off)

### **Lower-priority initial use cases**

- Complex finishing requiring high dexterity variability
  - Critical compliance tasks without human verification
  - High-risk utility tie-ins and code-signoff activities
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## 4) PROCUREMENT & PILOT STRATEGY (RECOMMENDED)

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### Phase 1: Vendor RFI (2 weeks)

- Request deployment prerequisites, safety model, integration stack, support terms, and lead times.

### Phase 2: Paid Pilot (90–180 days)

- Run in 1–2 lanes with measurable KPIs:
  - throughput impact
  - rework impact
  - safety incident rate
  - uptime/reliability

### Phase 3: Scale Decision

- Expand only if pilot beats baseline on throughput + safety + operating economics.

## 5) BUDGETING GUIDANCE (ROM)

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### Since list pricing is typically non-public, underwrite by pilot economics:

- Pilot setup + integration budget
- Support/maintenance terms
- Downtime response SLA
- Training and change-management costs
- Per-site scaling economics after pilot validation

### Use 3-case budgeting model:

- Conservative pilot case
- Base case
- Scale case (multi-line deployment)

## 6) EXECUTIVE RECOMMENDATION

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### Start with a dual-track pilot conversation:

- Track 1 (Logistics strength): Agility Robotics
- Track 2 (General industrial humanoid): Figure AI or Apptронik

**Run both against identical KPI gates and choose expansion based on measured plant performance, not vendor brand narrative.**